



## Claims

I claim:

1. An apparatus for securing structural members of a building together comprising:
  - a. a unitary body having a rectangular face, approximately right angled bends, and tabs;
  - b. said rectangular face having said approximately right angled bends on the top and side;
  - c. said top approximately right angled bends forming sheathing tabs;
  - d. said side approximately right angled bends forming rafter tabs;
  - e. said rafter tabs having approximately right angled bends on the bottom;
  - f. said approximately right angled bends, on said bottom of said rafter tabs, forming plate tabs;
  - g. said rectangular face having the lower long side extended down.
2. The apparatus of claim 1 wherein said rectangular face having a predetermined length as a means [of] for accurately spacing adjacent rafters from each other according to [standard] a predetermined construction dimension[s].
3. The apparatus of claim 1 wherein said rectangular face having a predetermined width wherein [the] said lower long side [part] having a predetermined area [a wall tab] as a means [of] for covering outside wall sheathing and underlying top plate, [while] and the middle and upper part of said rectangular face having a plurality of ventilation ribs and cover[s]ing the space between rafters.[, providing ventilation through ribs]
4. The apparatus of claim 1 wherein said [wall tab] lower part of said rectangular face having a predetermined area and a plurality of nail holes as a means [of] for attachment to vertical [edge] side of said outside wall sheathing and underlying top plate thereby preventing detachment of same.
5. The apparatus of claim 1 wherein said rafter tabs having a predetermined area and

a plurality of nail holes as a means [of] for attachment to a vertical edge of said adjacent rafters thereby connecting adjacent rafters together at a predetermined distance.

6. The apparatus of claim 1 wherein said plate tabs having a predetermined area and a plurality of nail holes as a means [of] for attachment to horizontal edge of said top plate [thereby] whereby said apparatus having attach[ment]ing means to the vertical and horizontal faces of [the] said top plate.
7. The apparatus of claim 1 wherein said sheathing tabs, said rafter webs, and said plate tabs having [bolt holes as a means for] attach[ment]ing means, and [to roof sheathing through predrilled holes, and to adjacent connectors, thereby] forming a strong I-beam shape against either side of a rafter.
8. The apparatus of claim 1 wherein said sheathing tabs, said rafter tabs, said plate tabs, and said rectangular face [wall tab] form a strong open box shape connection between said adjacent rafters, said top plate, said roof sheathing, and said wall sheathing thereby preventing uplift, thrusting, and lateral movement between the roof and the wall.
9. Apparatus for securing roof sheathing to structural members comprising:
  - a. a generally rectangular unitary roof tie;
  - b. carriage bolts and nuts.
10. The apparatus of claim 9 wherein said roof tie having predetermined area and oblong holes as a means for placing and holding said carriage bolts when inserted from above a roof.
11. The apparatus of claim 9 wherein said oblong holes having predetermined width between them as a means for spanning across roof sheathing and top part of rafter.

12. The apparatus of claim 9 wherein said carriage bolts having predetermined length and width as a means for penetrating said oblong holes, predrilled holes in roof, and through said bolt holes of said sheathing tabs of claim 7.
13. The apparatus of claim 9 wherein said nut having threads equal to said bolt as a means for securing said bolts, roof tie, and sheathing tabs to said roof tab on opposite sides of a rafter.
14. The apparatus of claim 9 wherein said roof tie and said plate ties, rafter ties, and sheathing ties of claim 1, form a strong I-beam shape against opposite sides of a rafter, roof sheathing, and top plate, thereby preventing uplift, thrusting, and lateral movement of a roof and wall during high winds and earth movements.
15. An apparatus for securing structural members of an existing building comprising:
  - a. two generally flat [plates] faces having approximately right angled bends on opposite ends[,] forming rafter tabs having a plurality of nail holes;
  - b. said flat plates, each having [a wall tab] the lower long side on the bottom[,] extended down, and having a predetermined area and [having] a plurality of nail holes as a means for attachment to outside wall sheathing and underlying top plate;
  - c. said plates having approximately right angled bends on top forming sheathing tabs[, having bolt holes as a means for attachment to roof sheathing];
  - d. said plates having horizontal tracks with openings on one end, on one plate, and the other plate having runners with faces and arms in the same plane.
16. The apparatus of claim 15 wherein said plates having approximate mirror image of each other.

17. The apparatus of claim 15 wherein said tracks on one plate allow said [head] face of said runner to enter at the opening and said arms [having] allowing horizontal movement along said track.

18. The apparatus of claim 15 wherein said plates move horizontally when coupled together with said runners and said tracks as a means of placing said rafter tabs against vertical faces of adjacent rafters.

19. The apparatus of claim 15 wherein said rafter tabs, [wall tabs] said extended bottoms on said rectangular faces, and said sheathing tabs having attachment to said rafters, said outside wall sheathing, and said top plate[, and roof sheathing] forming an open box shape, thereby preventing uplift, thrusting, and lateral movement of a roof and wall of an existing building during strong winds and earth movements.

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1. An apparatus for securing structural members of a building together comprising:
  - a. a unitary body having a rectangular face, approximately right angled bends, and tabs;
  - b. said rectangular face having said approximately right angled bends on the top and side;
  - c. said top approximately right angled bends forming sheathing tabs;
  - d. said side approximately right angled bends forming rafter tabs;
  - e. said rafter tabs having approximately right angled bends on the bottom;
  - f. said approximately right angled bends, on said bottom of said rafter tabs, forming plate tabs;
  - g. said rectangular face having the lower long side extended down.
2. The apparatus of claim 1 wherein said rectangular face having a predetermined length as a means for accurately spacing adjacent rafters from each other according to a predetermined construction dimension.
3. The apparatus of claim 1 wherein said rectangular face having a predetermined width wherein said lower long side having a predetermined area as a means for covering outside wall sheathing and underlying top plate, and the middle and upper part of said rectangular face having a plurality of ventilation ribs and covering the space between rafters.
4. The apparatus of claim 1 wherein said lower part of said rectangular face having a predetermined area and a plurality of nail holes as a means for attachment to vertical side of said outside wall sheathing and underlying top plate thereby preventing detachment of same.
5. The apparatus of claim 1 wherein said rafter tabs having a predetermined area and a plurality of nail holes as a means for attachment to a vertical edge of said adjacent rafters thereby connecting adjacent rafters together at a predetermined distance.

6. The apparatus of claim 1 wherein said plate tabs having a predetermined area and a plurality of nail holes as a means for attachment to horizontal edge of said top plate whereby said apparatus having attaching means to the vertical and horizontal faces of said top plate.
7. The apparatus of claim 1 wherein said sheathing tabs, said rafter webs, and said plate tabs having attaching means, and forming a strong I-beam shape against either side of a rafter.
8. The apparatus of claim 1 wherein said sheathing tabs, said rafter tabs, said plate tabs, and said rectangular face form a strong open box shape connection between said adjacent rafters, said top plate, said roof sheathing, and said wall sheathing thereby preventing uplift, thrusting, and lateral movement between the roof and the wall.
9. Apparatus for securing roof sheathing to structural members comprising:
- a. a generally rectangular unitary roof tie;
  - b. carriage bolts and nuts.
10. The apparatus of claim 9 wherein said roof tie having predetermined area and oblong holes as a means for placing and holding said carriage bolts when inserted from above a roof.
11. The apparatus of claim 9 wherein said oblong holes having predetermined width between them as a means for spanning across roof sheathing and top part of rafter.
12. The apparatus of claim 9 wherein said carriage bolts having predetermined length and width as a means for penetrating said oblong holes, predrilled holes in roof, and through said bolt holes of said sheathing tabs of claim 7.
13. The apparatus of claim 9 wherein said nut having threads equal to said bolt as a means for securing said bolts, roof tie, and sheathing tabs to said roof tab on opposite sides of a rafter.

14. The apparatus of claim 9 wherein said roof tie and said plate ties, rafter ties, and sheathing ties of claim 1, form a strong I-beam shape against opposite sides of a rafter, roof sheathing, and top plate, thereby preventing uplift, thrusting, and lateral movement of a roof and wall during high winds and earth movements.

15. An apparatus for securing structural members of an existing building comprising:

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- a. two generally flat faces having approximately right angled bends on opposite ends forming rafter tabs having a plurality of nail holes;
  - b. said flat plates, each having the lower long side on the bottom extended down, and having a predetermined area and a plurality of nail holes as a means for attachment to outside wall sheathing and underlying top plate;
  - c. said plates having approximately right angled bends on top forming sheathing tabs;
  - d. said plates having horizontal tracks with openings on one end, on one plate, and the other plate having runners with faces and arms in the same plane.

16. The apparatus of claim 15 wherein said plates having approximate mirror image of each other.

17. The apparatus of claim 15 wherein said tracks on one plate allow said face of said runner to enter at the opening and said arms allowing horizontal movement along said track.

18. The apparatus of claim 15 wherein said plates move horizontally when coupled together with said runners and said tracks as a means of placing said rafter tabs against vertical faces of adjacent rafters.

19. The apparatus of claim 15 wherein said rafter tabs, said extended bottoms on said rectangular faces, and said sheathing tabs having attachment to said rafters, said outside wall sheathing, and said top plate forming an open box shape, thereby preventing uplift, thrusting, and lateral movement of a roof and wall of an existing building during strong winds and earth movements.